a variety from southern Russia, I discovered that the so-called pistillate flowers possessed stamens. One hundred flowers were examined, and there were stamens in all. In seventy-six cases the stamens were three, the same as in the staminate flowers, which were present in about the usual number. In the others the stamens ranged from one to five. Where five were present they alternated with the five petals, and with the five parts of the pistil in such cases. Of the three stamens usually found, one stood alternate with the petals and the other two opposite to them, each of the latter showing by its position and larger size that it represented two.

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CURRENT LITERATURE.

A host-index of fungi.

Those who are acquainted with the Cryptogamic herbarium of Harvard University know what voluminous indexes are kept up to facilitate study of that splendid collection. In publishing an index to the hosts of parasitic fungi[1] the director and curator of the herbarium have placed at the disposal of students of fungi a most important help, one which will not only prevent the duplication of much drudgery, but will also greatly facilitate a more *accurate* study of the mycologic flora, and, therefore, "tend to lessen the amount of indiscriminate species-making, which has already become a serious evil." The index consists of a list of host plants arranged in the usual order, and in nomenclature following generally Watson's index. These names are printed in bold-face type, and followed by the names of fungi occurring upon them. Synonyms are but sparingly given, usually only those which have appeared in connection with the record of the occurrence of the species on particular hosts in N. A.

It is needless to dwell upon the utility of this publication. It commends itself at first thought to mycologists. The typography and arrangement are excellent. The authors expect to complete the work during the coming winter. Copies can be obtained for $1, by addressing either of the authors, at Cambridge, Mass.

The plant cell.

It is a little over twenty years since Hofmeister's "Lehre von der Pflanzenzelle" appeared, and in those twenty years a vast advance has been made in our knowledge of the finer structure of the plant cell by means of the improved optical appliances, and particularly the methods of investigation. As no work has appeared since the classical treatise of Hofmeister which gives in compact form a statement of the knowledge we possess about the plant cell, this book[2] of Dr. Zimmermann is specially

[1] FARLOW, W. G. and SEYMOUR, A. B.—A provisional host-index of the fungi of the U. S.—Part I—Polypetalæ, pp. 52, sq. roy. 8vo. Cambridge: [the authors] August, 1888.

[2] ZIMMERMANN, A.—Die Morphologie und Physiologie der Pflanzenzelle. (Sep.-Abdr. aus der Encyklopädie der Naturwissenschaften: Abtheilung, Handbuch d. Botanik.) pp. 223, figg. 36, roy. 8vo. Breslau: Edward Trewendt. 1887.

welcome. It forms a part of Schenk's Hand-book of Botany, parts of which have already been noticed in this journal (vol. x. 314 and 331). So vast has become the literature of this subject that it has been quite impossible for Dr. Zimmermann to test all the observations recorded, but he has evidently used great care in quoting results, and has gathered from many sources. In a bibliography, "which lays no claim to completeness," 376 separate papers and works are cited. Botanists would thank the author had he done nothing more than summarize the chief points contained in these widely scattered papers; how much more do they owe him for the painstaking sifting and digesting which he has performed. The judicial remarks upon various opinions and theories seem to indicate a wise conservatism and the application of sound common sense to the intricate problems presented by the plant cell.

It is quite impossible to review this excellent work in detail in the space at command. We can serve our readers better by giving an insight into the scope of the work by citing the chapter headings. The first part (166 pages) treats of the morphology of the cell under the following main topics: Form of the plasma; intimate structure and chemical composition of the cytoplasm; the nucleus, its intimate structure and the chemical composition of the resting nucleus, nuclear division and coalescence; the chromatophores, their finer structure, chemical composition, inclusions, multiplication and metamorphoses; other organs of the plasma (such as cilia, eye-spots, etc.); proteid grains and crystalloids; starch grains and similar bodies; the solid and liquid inclusions of the cell; chemical composition, form, finer structure, origin and growth of the cell membrane; cell-formation and growth.

The second part (40 pp.) treats the physiology of the cell under the heads: theory of swelling and osmose; physical properties of the cell-membrane; the hygroscopic parts of plants; physical properties of the plasma; aggregation; and the mechanics of the cell.

We venture to predict that this work will become as indispensable to students as Hofmeister's has been. American botanists especially will appreciate it the more because of the inaccessibility of most of the literature.

Minor Notices.

THE SEVENTH PART of Husnot's Muscologia Gallica[3] has been issued. It concludes the genus Orthotrichum, to which a key to species is given, and treats the genera Encalypta, Schistostega, Œdipodium, Dissodon, Tayloria, Tetraplodon, Splachnum. Ephemerum, Physcomitrella, Discelium, Pyramidula, Physcomitrium, Entosthodon, Funaria, Mielichhoferia, Orthodontium, Leptobryum, Anomobryum and Plagiobryum. Bryologists will notice the new a sociation of the genera. The plates of this valuable work grow better and better.

[3] HUSNOT TH.—Muscologia Gallica: Descriptions et figures des mousses de France et des contrées voisines. 7è livraison. pp. 193–224. pl. liii–lx. roy. 8vo. Cahan: the author. 1888. 5 francs.

THE COMMISSIONERS of the state reservation at Niagara requested Mr. David F. Day, the well known botanist of Buffalo, to prepare a list of the flora of the vicinity of the falls. This list[4] comprises 909 species. Common names and remarks on the localities and relative abundance are given. From Mr. Day's reputation for painstaking accuracy, we are sure that the catalogue may be depended upon.

THE FIRST BULLETIN[5] of the division of pomology of the Department of Agriculture relates wholly to fruits which can only be cultivated in the Southern States or California. Two Japanese plums and three varieties of Japanese persimmons are figured in colors, and certainly look tempting enough. The remainder of the report gives accounts of the growing of various tropical and semi-tropical fruits which are either now cultivated or might prove profitable in the localities named. The number is surprisingly large.

NOTES AND NEWS.

DR. DOUGLAS H. CAMPBELL has been elected to the chair of botany in the State University of Indiana.

IN THE description of Polytrichum Ohioense, in the August GAZETTE, p. 200, Crowdin Mount, N. C., should read Crowder's Mount.

THE PROFESSORSHIP of botany at Bryn Mawr College has been consolidated with that of biology, under the charge of Dr. E. B. Wilson. We are sorry to record this backward step.

THE BOTANICAL CLUB, A. A. A. S., registered nearly sixty at Cleveland. So great has been the exodus to Europe this summer that that number may be looked upon as large. The absence of botanists from east of the Hudson was conspicuous.

MR. B. T. GALLOWAY, at present assistant in the section of vegetable pathology of the Department of Agriculture, will become the head of the section when Mr. Scribner assumes his duties at the University of Tennessee. The change will occur in October.

DR. DELAMARE, whose work in connection with the Flora of Miquelon was noticed in this journal for June (p. 168), died recently at Miquelon, as we learn from M. Jules Cardot. Dr. Delamare was an indefatigable collector, and had almost completed his botanical exploration of the island.

WERMINSKI gives[1] a brief account of his researches upon the nature of aleurone grains. He concludes that they are formed from vacuoles which contain proteids in solution. By loss of water in ripening the substance of the aleurone grain is precipitated through a physico-chemical process.

[4] DAY, DAVID F.—A catalogue of the flowering and fern-like plants growing without cultivation in the vicinity of the Falls of Niagara. pp. 67. 8vo. Troy: The Troy Press Co., printers. 1888.

[5] VAN DEMAN, H. E.—Report on the condition of tropical and semi-tropical fruits in the U. S. in 1887. pp. 149. pl. col. iii. 8vo. Washington: Gov't Printing-office. 1888.

[1] Ber. d. deut. bot. Gesellschaft vi. 199 (July 24, 1888).